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User's Guide to the Boston Region Traffic Count File

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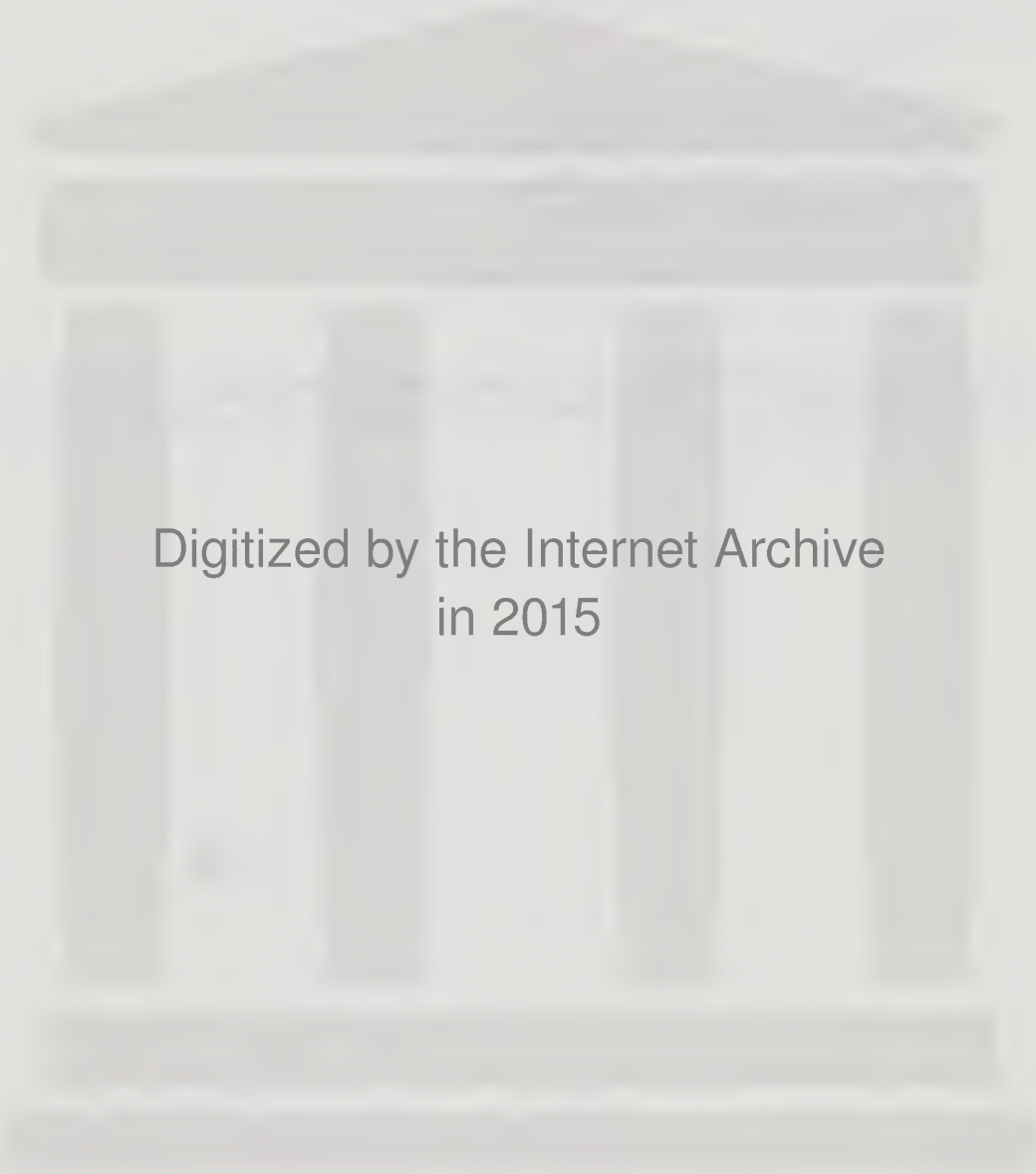
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User's Guide to the Boston Region Traffic Count File

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Part I. Introduction

The Boston Region Traffic Count File is an inventory of available traffic counts from all locations within the MAPC region. The database includes mechanical recorder counts and turning movement counts since 1975. This central database consolidates data from a variety of sources including the Massachusetts Department of Public Works (MDPW), cities and towns, transportation consultants, environmental impact reports and transportation studies.

Promotion of the database has resulted in requests from both public and private sectors. Many of these requests have led to data exchange and database expansion.

Part II. Description and design of files

A. Mechanical recorder and turning movement count files

The traffic count file is set up as two separate files for mechanical recorder counts (MRC's) and turning movement counts (TMC's).

Mechanical recorder counts record the number of vehicles passing a point, usually at 15-minute or one-hour intervals and adjusted to express the average daily traffic (ADT). These counts are taken with automatic recording devices.

Turning movement counts are taken manually at intersections and reflect the number of cars going straight or making right or left turns at intersections. These counts are normally taken during the A.M. and P.M. peak hours to reflect the heaviest weekday traffic flows.

B. Computer files

A dBase III program was written for each file to allow the appropriate information to be entered and stored as shown in the sample printouts in Appendix A.

The computer file keys for MRCs and TMCs are shown respectively in Tables 1 and 2 with a description of information available on each record. The first thirteen digits are the index numbers that are also entered on the hard copy (paper) file for easy reference and for further documentation. The first digit indicates the type of count: "1" for MRC or "2" for TMC. Next is the city/town number (three digits) followed by the road number (four digits). Both the city/town code and the road code are identical to those used in the MDPW's Road Inventory File. The road number corresponds to the primary route indicated by the study.

Table 1

COMPUTER FILE KEY - MECHANICAL RECORDER COUNTS (MRC)

COLUMN		
1-13	Index Number*	
(1)	Count Type	1 = Mechanical Recorder Count (MRC) 2 = Turning Movement Count (TMC)
(2-4)	Town Number	code from MDPW Road Inventory File
(5-8)	Road Number	code from MDPW Road Inventory File
9-13	Count File Number	
(9-10)		year study was published
(11-13)		item number (chronological order of studies reviewed in that year, example: 002 = second study) 998 = MDC counts 999 = MDPW counts
14	Time Period Counted	1 = 24 hrs or more 2 = A.M. peak hr 3 = P.M. peak hr 4 = A.M. & P.M. peak hrs 5 = other 6 = 11 hrs
17-29	Community Name	
31-33	State Route Number	
33-54	Street Name	
56-90	Location	
92-95	Secondary Road Number	
97-104	Date of Count (MM/DD/YY)	
106-111	Actual Count (Average Daily Traffic)	

*First 13 columns are index number for paper files.

Table 2

COMPUTER FILE KEY - TURNING MOVEMENT COUNTS (TMC)

COLUMN		
1-13	Index Number*	
(1)	Count Type	1 = Mechanical Recorder Count (MRC) 2 = Turning Movement Count (TMC)
(2-4)	Town Number	code from MDPW Road Inventory File
(5-8)	Road Number	primary route of study code from MDPW Road Inventory File
9-13	Count File Number	
(9-10)		year study was published
(11-13)		item number (chronological order of studies reviewed in that year, example: 002 = second study) 998 = MDC counts 999 = MDPW counts
14	Time Period Counted	1 = 24 hrs or more 2 = A.M. peak hr 3 = P.M. peak hr 4 = A.M. & P.M. peak hrs 5 = other 6 = 11 hrs
17-29	Community Name	
31-80	Area of Count	
82-85	Secondary Road Number	
86-87	Number of Counts in Area (approximate)	
88-95	Date of Count (MM/DD/YY)	

*First 13 columns are index number for paper files.

The next five digits make up the count file number. The first two of these show the year of the report from which the data came. The last three digits chronicle the order in which the data was filed. For example, if the count file number were 86002, the data is from the second study filed in 1986 in that community. MDPW and MDC counts show "999" and "998", respectively, in this position. For example, a count file number of '85999' is an MDPW count from 1985.

After the index number, the next entry is a code indicating the time period that the count covers: 24 hours or more, A.M. peak hour, P.M. peak hour, or A.M. and P.M. peak hours. An additional category of eleven-hour counts has been added to anticipate a large number of counts taken by the City of Boston over eleven-hour time intervals.

The sixth field entered is the community name. After the community name, the fields differ for MRC's and TMC's.

The MRC file lists the state route number, street name and further describes the location. To pinpoint a location when a cross street is referenced, the MDPW road number of this cross street is also entered. Finally, the date of the count and the average daily traffic (ADT) are given. (See Appendix A-1)

The TMC file is less specific than the MRC file. Instead of noting each specific location the general vicinity of several counts is listed after the community name, for example "Washington St. from Main St. to Grove St.". This is followed by the MDPW's road number for the secondary road in the study area.

The next entry indicates the number of counts in the study area. Because the amount and complexity of TMC data is greater than MRC's, the computer does not itemize every intersection but indicates locations for which data are available. The user is referred to the paper file for the counts themselves.

The final entry is the date of the counts. (See Appendix A-2)

C. Paper files

The hard copy or paper file includes all counts indexed in the computer file and other relevant documentation. The files are arranged alphabetically by community. Within each community the counts are in chronological order by the report date, i.e., the count file number. (See Appendix B) The index number on each page of the paper file corresponds to the thirteen digit index number (first thirteen columns) on the computer file.

D. Data retrieval

Data may be retrieved for one community, a group of communities, or all 101 communities in the Boston region. When counts for more than one community are requested, they are printed in alphabetical order by community and in chronological order by the date of count.

Mechanical recorder counts may also be printed by route number, organized alphabetically by community and chronologically within the community.

Future possibilities for data retrieval include counts by date (year) or route number within a community or communities.

Part III. Installation of software

The programs are written in dBase III for the IBM PC or other IBM-compatible computer.

If dBase III is installed on the hard disk, the traffic count disk should go in drive A. After selecting dBase III, press <Esc>. After the dBase menu appears, type SET DEFA TO A <Enter> at the first dot prompt. Type DO ~~TRAFFIC~~ \Traffic\TRFCOM1 <Enter> at the next dot prompt for the main menu.

The traffic count program itself can also be installed on the hard disk.

If your computer does not have a hard disk, insert the dBase III disk in drive A, and the traffic count disk in drive B. At the A> prompt, type DBASE. After the dBase menu appears, hit the <Esc> key. At the dot prompt, type SET DEFA TO B and hit the <Enter> key. At the next dot prompt, type DO\TRAFFIC\TRFCOM1 <Enter> and the main menu will appear.

Part IV. Using the database: explanation of menus

When the main menu appears on the screen, the user may choose to append new records, edit existing records, print a report of all or some communities, return to dBase or return to DOS. To select one of these options, type the number of the option at the prompt, as shown in Figure 1.

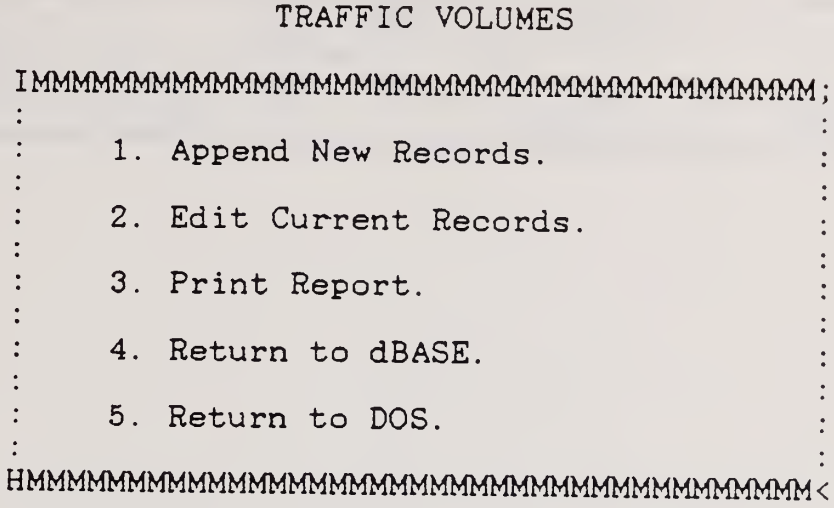


Figure 1 Main Menu

A. Append new records

To add new records to either of the two existing files, records can be typed in and immediately stored in the computer files, or they can be appended from a floppy disk in drive A. (Figure 2)

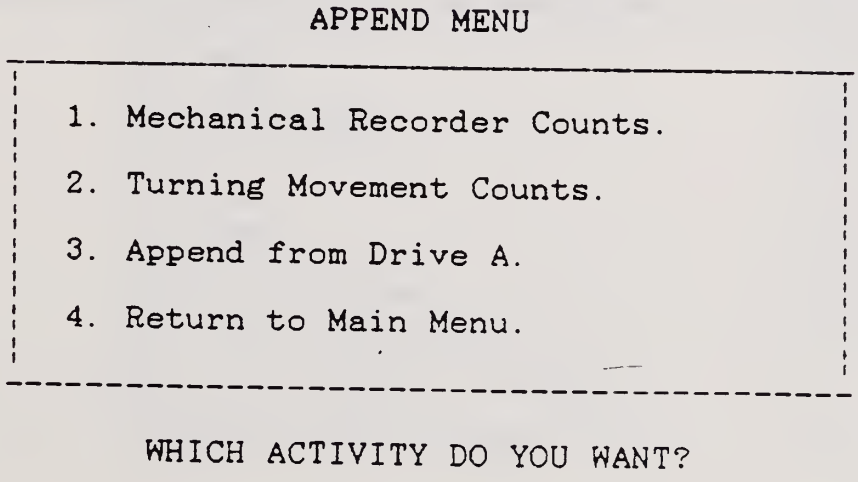

APPEND MENU
1. Mechanical Recorder Counts.
2. Turning Movement Counts.
3. Append from Drive A.
4. Return to Main Menu.
WHICH ACTIVITY DO YOU WANT?

Figure 2 Append Menu

```
Record No.       1
IMMMMMMMMMMMMMMMMMMKMMMMMMMMMMMMMMMMMMMMMMKMMMMMMMMMMMMMMMMMKMMMMMMMMMMMMMMMMMM;
: CURSOR   <-- --> :          UP   DOWN   :    DELETE    : Insert Mode:  Ins  :
         : Char:   Del  : Exit/Save:   ^End  :
:  Word:  Home End : Page:  PgUp  PgDn   : Field:  ^Y   : Abort:         Esc  :
:                  : Help:   F1          : Record: ^U   : Memo:        ^Home :
HMMMMMMMMMMMMMMMMMMJMMMMMMMMMMMMMMMMMMMMMMJMMMMMMMMMMMMMMMMMJMMMMMMMMMMMMMMMMMM<
TYPE
TNO
RNO
COUNTIDN
TIMEPC
CITY
ROUTENO
STNAME
LOCATION
SRNO
VDATE
MD
TDATE          /  /
ADT
MARK1
```

Figure 3a Mechanical Recorder Count record structure as it appears on the screen

```
Record No.       1
IMMMMMMMMMMMMMMMMMMKMMMMMMMMMMMMMMMMMMMMMMKMMMMMMMMMMMMMMMMMKMMMMMMMMMMMMMMMMMM;
: CURSOR   <-- --> :          UP   DOWN   :    DELETE    : Insert Mode:  Ins  :
         : Char:   Del  : Exit/Save:   ^End  :
:  Word:  Home End : Page:  PgUp  PgDn   : Field:  ^Y   : Abort:         Esc
:                  : Help:   F1          : Record: ^U   : Memo:        ^Home
HMMMMMMMMMMMMMMMMMMJMMMMMMMMMMMMMMMMMMMMMMJMMMMMMMMMMMMMMMMMJMMMMMMMMMMMMMMMMMM
```

TYPE	1 = MRC, 2 = TMC	numerical
TNO	town number	numerical
RNO	road number	numerical
COUNTIDN	count file number	numerical
TIMEPC	time period counted	numerical
CITY	city	character
ROUTENO	route number	character
STNAME	street name	character
LOCATION	location of count	character
SRNO	secondary road number	character
VDATE *	date of count (MM/DD/YY)	numerical
MD **	used to put counts in chronlogical order, do not appear in printout	character
TDATE ** / /		character
ADT	average daily traffic	date
MARK1 **	for printing, does not appear in printout	numerical
		logical

*When entering the date of count in VDATE, it must be in the Format MM/DD/YY. If the month and/or day are unknown, enter zeros. (Example: 00/00/87)

**Do not enter any characters in the fields MD, TDATE, and MARK1

Figure 3b Description of fields in the Mechanical Recorder Count record structure

```
Record No.       1
IMMMMMMMMMMMMMMMMMMKMMMMMMMMMMMMMMMMMMMMMKMMMMMMMMMMMMMMMMMKMMMMMMMMMMMMMMMMM;
: CURSOR   <-- --> :          UP   DOWN   :    DELETE     : Insert Mode:  Ins  :
         : Char:   Del  : Exit/Save:   ^End  :
:  Word:  Home End : Page:  PgUp  PgDn   : Field:  ^Y    : Abort:         Esc  :
:                  : Help:   F1          : Record: ^U    : Memo:          ^Home :
HMMMMMMMMMMMMMMMMMMJMMMMMMMMMMMMMMMMMMMMMJMMMMMMMMMMMMMMMMMJMMMMMMMMMMMMMMMMM<
TYPE
TNO
RNO
CTIDNO
TIMEPC
CITY
CTAREA
SRNO
CTNO
VDATE
MD
TDATE          /  /
MARK1
```

Figure 4a Turning Movement Count record structure as it appears on the screen

```
Record No.       1  Description                                    type of field
IMMMMMMMMMMMMMMMMMMKMMMMMMMMMMMMMMMMMMMMMKMMMMMMMMMMMMMMMMMKMMMMMMMMMMMMMMMMM
: CURSOR   <-- --> :          UP   DOWN   :    DELETE     : Insert Mode:  Ins  :
         : Char:   Del  : Exit/Save:   ^End  :
:  Word:  Home End : Page:  PgUp  PgDn   : Field:  ^Y    : Abort:         Esc
:                  : Help:   F1          : Record: ^U    : Memo:          ^Home
HMMMMMMMMMMMMMMMMMMJMMMMMMMMMMMMMMMMMMMMMJMMMMMMMMMMMMMMMMMJMMMMMMMMMMMMMMMMM
TYPE                    1 = MRC, 2 = TMC                                numerical
TNO                     town number                                     numerical
RNO                     road number                                     numerical
CTIDNO                  count file number                               numerical
TIMEPC                  time period counted                             numerical
CITY                    city                                            character
CTAREA                  area where counts were taken                    character
SRNO                    secondary road number                           numerical
CTNO                    number of counts in the area                    numerical
VDATE *                 date of count (MM/DD/YY)                        character
MD **                   used to put counts in chronological             character
TDATE **       /  /     order, do not appear in printout                date
MARK1 **                for printing, does not appear in                logical
                        printout
```

*When entering the date of count in VDATE, it must be in the Format MM/DD/YY. If the month and/or day are unknown, enter zeros. (Example: 00/00/87)

**Do not enter any characters in the fields MD, TDATE, and MARK1

Figure 4b Description of fields in the Turning Movement Count record structure

Before typing in new records, the user must first indicate whether MRC's or TMC's will be added. A temporary database file is opened to accept the new records.

The record structure is displayed on the screen and the data can be entered. Figures 3a and 4a show exactly what appears on the screen for MRC's and TMC'S respectively, and 3b and 4b list the type of field and a description of the information entered in each field. When the record structure is on the screen, the number of characters in each field is highlighted, and dBase will not allow more characters to be entered than the number allotted by the structure.

The arrow keys allow the user to move back and forth within a record, and the <PgUp> and <PgDn> keys move the cursor to the beginning of the preceding or following record.

After the data has been entered press the <CTRL> and <End> keys simultaneously to save the new entries. These records are added to the existing file and the entire file is reindexed. That is, the records are sorted in alphabetical order by community name with the old records. The temporary database is erased.

If the database files are on hard disk, information on a floppy disk can be added to either file. Select "Append from Drive A" from the Append menu, and then choose which file (MRC or TMC) to add the new records to. Be sure that the floppy disk is in drive A. The new records are added to the existing database and the file is reindexed.

B. Edit current records

The second main menu choice allows the user to correct existing records in either file. After choosing to edit, the user is asked to select between the MRC file or the TMC file, or to return to the main menu. Once the file has been selected, the line "Which record do you want to edit?" appears on the screen and the user can input the record number. (See Figure 5)

EDIT MENU

1. Mechanical Recorder Counts.

2. Turning Movement Counts.

3. Return to Main Menu.

WHICH ACTIVITY DO YOU WANT?

Figure 5 Edit Menu

The record is displayed on the screen, and the up and down arrow keys allow the user to move from field to field to change or delete data. To exit the record without saving the changes, press the escape key <Esc>. To save new data advance to the end of the record with the down arrow key or the <PgDn> key. The prompt "Do you wish to edit another record (Y/N)?" will appear. An answer of "Y" signals the prompt "Which record do you want to edit?" and the user types a record number. An answer of "N" saves the revised records, reindexes the file and returns to the main menu.

To mark a record for deletion when editing, type <CTRL>U. "DEL" will appear at the top of the screen when that record is displayed. To reinstate the record, type <CTRL>U again.

To permanently delete a record, use the "PACK" command in dBase.

C. Print report

Choice number three allows you to print all or part of either the TMC or MRC file. After selecting "print report" from the main menu, the user selects the MRC file or the TMC file.

For the MRC file, the report may be printed by route number or community. If selecting the turning movement count file, or choosing "By community" for the mechanical recorder count file, another menu appears with the three choices: (1) all communities, (2) one community, and (3) a group of communities. (See Figures 6, 7, and 8)

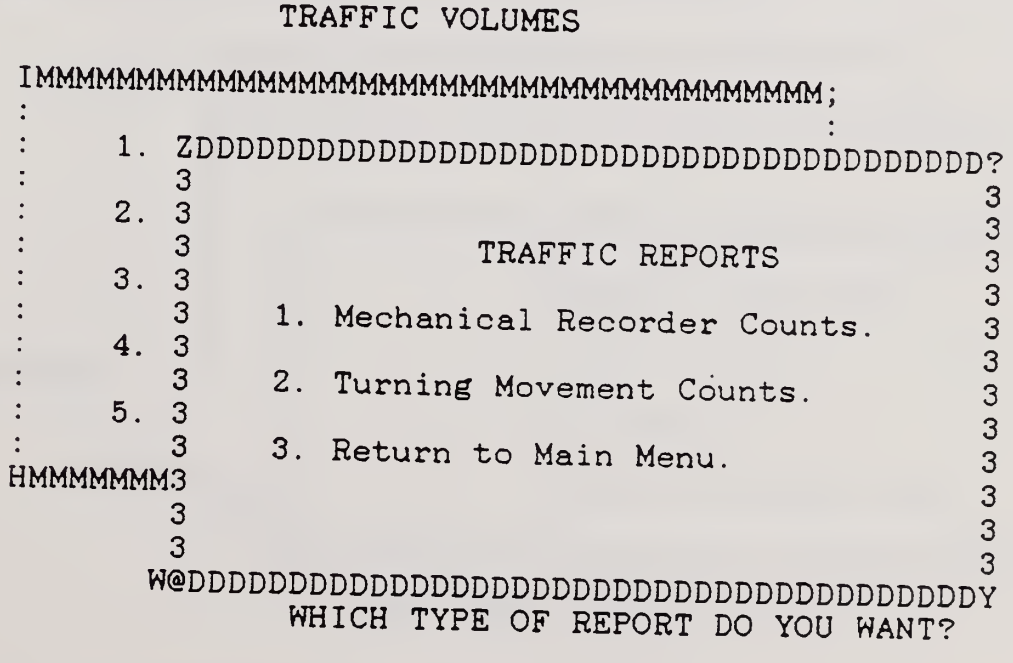


Figure 6 Print Menu

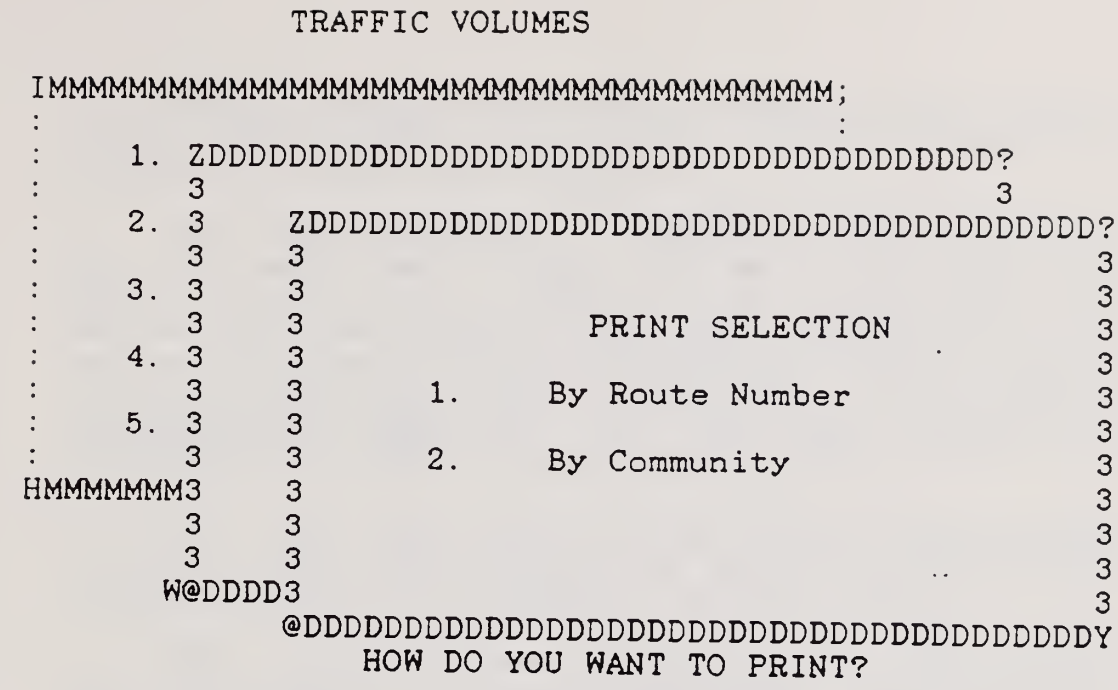


Figure 7 Mechanical Recorder Count Print Menu

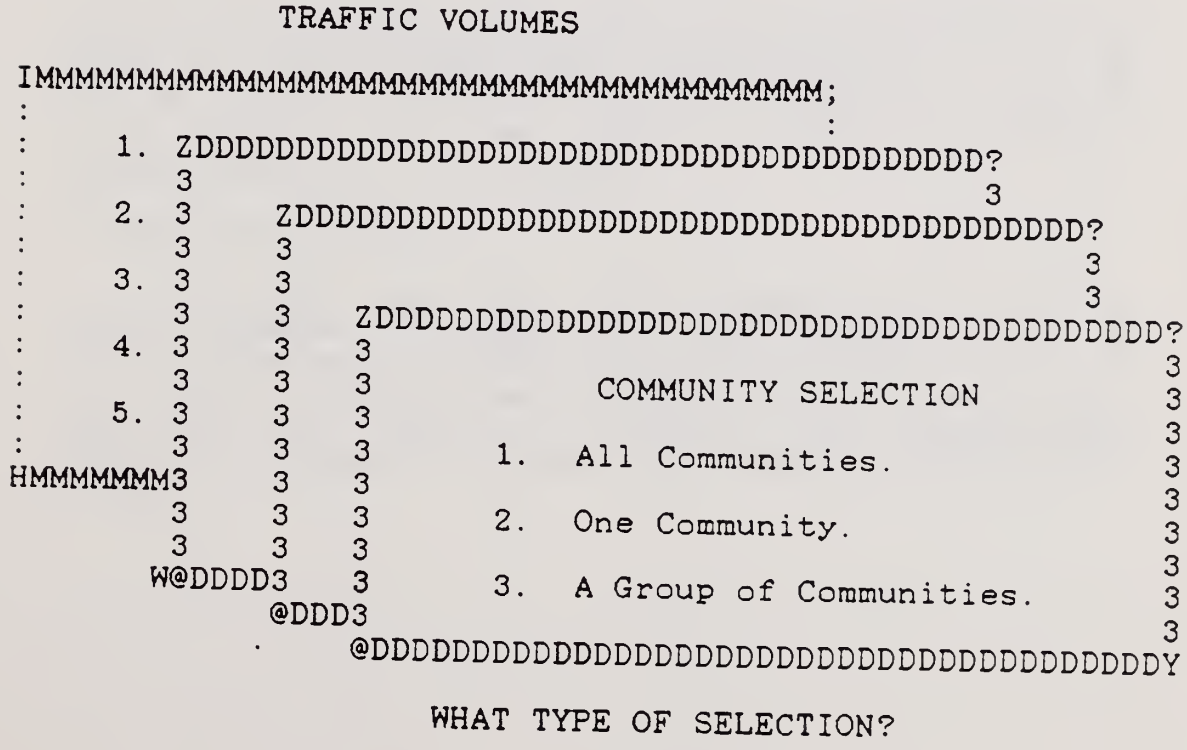


Figure 8 Community Menu

Before typing in new records, the user must first indicate whether MRC's or TMC's will be added. A temporary database file is opened to accept the new records.

The record structure is displayed on the screen and the data can be entered. Figures 3a and 4a show exactly what appears on the screen for MRC's and TMC'S respectively, and 3b and 4b list the type of field and a description of the information entered in each field. When the record structure is on the screen, the number of characters in each field is highlighted, and dBase will not allow more characters to be entered than the number allotted by the structure.

The arrow keys allow the user to move back and forth within a record, and the <PgUp> and <PgDn> keys move the cursor to the beginning of the preceding or following record.

After the data has been entered press the <CTRL> and <End> keys simultaneously to save the new entries. These records are added to the existing file and the entire file is reindexed. That is, the records are sorted in alphabetical order by community name with the old records. The temporary database is erased.

If the database files are on hard disk, information on a floppy disk can be added to either file. Select "Append from Drive A" from the Append menu, and then choose which file (MRC or TMC) to add the new records to. Be sure that the floppy disk is in drive A. The new records are added to the existing database and the file is reindexed.

B. Edit current records

The second main menu choice allows the user to correct existing records in either file. After choosing to edit, the user is asked to select between the MRC file or the TMC file, or to return to the main menu. Once the file has been selected, the line "Which record do you want to edit?" appears on the screen and the user can input the record number. (See Figure 5)

When the first choice "all communities" is selected, all communities are printed in alphabetical order, and the counts within each community are arranged chronologically. (See Appendix A) For the TMC file, the total number of counts for each community is given. After the entire file is printed, the main menu appears on the screen.

To print the counts for one community, the user types the name of the community after the prompt, "Which community do you wish to print?". The counts for that community are then printed in chronological order.

To select a group of communities to print, the entire list of communities is displayed on the screen. To choose a community, advance to the box in front of that community by using the arrow keys or the <Enter> key. Select a community by marking "X" in the box. While it is possible to type in other characters, the community will only be printed if the letter "X" is in the box in front of the community name. To erase the "X" or any other character in a box, hit the space bar when the cursor is in the box.

The user may select any number of communities, and when finished making choices, should either advance to the bottom of the screen using the arrow keys or hit the <PgDn> key. The communities will then be printed in alphabetical order, the counts within each community in chronological order.

To print the mechanical recorder counts for a specific route number, enter the route number at the prompt after selecting "By route number" from the menu. An error message will appear if the input is not numeric, i.e. "495" should be entered instead of "I495". The counts will be printed in alphabetical order by community, and chronologically within the community.

After the report is printed, the main menu returns to the screen.

D. Return to dBase

After selecting "return to dBase", the dBase dot prompt appears and any dBase III command may be entered. This allows the user to do things that are not on the menu.

To work with either the TMC file or the MRC file, type "USE \TRAFFIC\TMCDBF1" or "USE \TRAFFIC\MRCDBF1" respectively.

A useful dBase command is "LIST". To view a specific record, type "LIST RECORD <record number>". The column headings and the entries for each field for that record will be displayed on the screen. If the record number is out of range, dBase will indicate that with an error message.

The LIST command can also be used to view specific columns for specific attributes. For example, the commands:

```
USE \TRAFFIC\MRCDBF1
LIST CITY, ADT FOR CITY = "BOSTON"
```

will show the city name and average daily traffic (ADT) for all of the records from Boston in the MRC file.

To delete records in dBase, type DELETE RECORD <record number>. This marks the record for deletion, the same way <CTRL>U does when in the editing mode. After marking a record for deletion, an asterisk (*) appears next to that record number when the records are listed with the LIST command. To remove the asterisk and reinstate the record, type RECALL RECORD <record number>.

To permanently delete records after marking them for deletion with <CTRL>U or DELETE, type PACK. After using the command PACK, there is no way to retrieve those records.

To leave dBase, type QUIT. This returns the user to DOS. Refer to the dBase III manual for other commands.

E. Return to DOS

The final menu choice is to return to DOS, the operating system. It is a good idea to make backup copies of the database files every time records are added or edited. To do this, first switch to the correct directory by typing "CD TRAFFIC". To backup the TMC file, type "COPY TMCDBF1.DBF *.BAK". For the MRC file, type "COPY MRCDBF1.DBF *.BAK".

V. Documentation of Software

A. Flowcharts

Flowcharts of the menus and the separate programs are included in Appendix C.

B. Printouts of the programs

Printouts of all the programs are available under separate cover upon request. Included in Appendix D is a list of the programs used and a printout of the program that runs the main menu.

Appendices

A. Samples of computer printout
B. Samples from paper file
C. Flow charts
D. Printout of programs

MECHANICAL RECORDER COUNT DATA
Metropolitan Area Planning Council

RECORD NUMBER	COUNT TYPE	TOWN NO.	ROAD NO.	ID NO.	TIME PERIOD	CITY OR TOWN	RTE. NO.	STREET NAME	LOCATION	SEC. ROAD NO.	DATE	ADT
1710	1	71	138	86003	1	DANVERS		ENDICOTT ST	W OF WATER ST. WB	277	06/04/86	7131
1711	1	71	138	86003	1	DANVERS		ENDICOTT ST	W OF WATER ST. EB	277	06/04/87	8511
** DEDHAM												
1212	1	73	4	83999	1	DEDHAM		EAST STREET	NORTH OF RTE. 128	0	00/00/83	19850
1213	1	73	100	83999	1	DEDHAM		ELM STREET	EAST OF RTE. 1	0	00/00/83	6650
1214	1	73	100	83999	1	DEDHAM		ELM STREET	WEST OF RTE. 1	0	00/00/83	15100
1215	1	73	95	83999	1	DEDHAM		HIGHLAND STREET	WEST OF RTE.1A	0	00/00/83	1150
1216	1	73	448	83999	1	DEDHAM		HIGHLAND TERRACE	WEST OF RTE. 1A	0	00/00/83	200
1217	1	73	89	83999	1	DEDHAM		WEST STREET	UNDER RTE. 128	0	00/00/83	13300
204	1	73	6	84999	1	DEDHAM	1	BOSTON/PROVIDENCE TPK.	N. OF RTE. 128	0	00/00/84	40869
965	1	73	3	85999	1	DEDHAM	1-A		OVER RTE. 128	464	00/00/85	20958
1012	1	73	0	85999	1	DEDHAM	1095		SOUTH OF RTE. 109	2	00/00/85	107700
1093	1	73	0	85999	1	DEDHAM		WHALERS WAY	OVER RTE. 128	51	00/00/85	20958
** EVERETT												
1267	1	93	52	81999	1	EVERETT		FULLER STREET	EAST OF LYNN STREET	0	00/00/81	5950
1268	1	93	44	81999	1	EVERETT		LYNN STREET	BTWN. SHUTE & FULLER STREETS	0	00/00/81	7650
1269	1	93	44	81999	1	EVERETT		LYNN STREET	AT MALDEN C/L	0	00/00/81	5550
798	1	93	155	85998	1	EVERETT		REVERE BEACH PKWY-I	BTW CHELSEA C/L AND BROADWAY	1	08/06/85	30781
800	1	93	155	85998	1	EVERETT		REVERE BEACH PKWY-VI	BTW BROADWAY AND SANTILLI CIRCLE	1	08/06/85	14730
797	1	93	0	85998	1	EVERETT		MONSANTO RD.	550 FT. S. OF SANTILLI CIRCLE	287	08/07/85	801
799	1	93	155	85998	1	EVERETT		REVERE BEACH PKWY-I	BTW BROADWAY AND SANTILLI CIRCLE	1	08/07/85	26942
** FOXBOROUGH												
465	1	99	4	86001	1	FOXBOROUGH		MECHANIC ST.	WEST OF OAK ST.	140	00/00/83	12050
467	1	99	5	86001	1	FOXBOROUGH		COCASSETT ST.		0	00/00/83	4920
73	1	99	4	83001	1	FOXBOROUGH		MECHANIC ST.	WEST OF OAK STREET	140	10/00/83	12837
75	1	99	140	83001	1	FOXBOROUGH		OAK ST.	S. OF MECHANIC ST.	4	10/00/83	3992
76	1	99	5	83001	1	FOXBOROUGH		COCASSET ST.	W. OF SANDS ST.	139	10/00/83	4920
77	1	99	51	83001	1	FOXBOROUGH		WOLOMOLOPOAG ST.	S. OF S. MAIN ST.	43	10/00/83	1917
78	1	99	53	83001	1	FOXBOROUGH		FURNACE ST.	W. OF WOLOMOLOPOAG ST.	51	10/00/83	268
466	1	99	140	86001	1	FOXBOROUGH		OAK ST.		0	10/00/83	3992
1013	1	99	13	85999	1	FOXBOROUGH	1095		NORTH OF RTE. 140	11	00/00/85	47450
1014	1	99	13	85999	1	FOXBOROUGH	1095		NORTH OF RTE. 1-495	194	00/00/85	47500
1022	1	99	194	85999	1	FOXBOROUGH	1495		NORTH OF RTE. I-95	13	00/00/85	25500
** FRAMINGHAM												
1436	1	100	0	79999	1	FRAMINGHAM		GROVE STREET	NORTH OF MASS. PIKE	0	00/00/79	1800
56	1	100	1	75001	5	FRAMINGHAM	9	WORCESTER RD	AT NATICK TL	0	00/00/75	34850
57	1	100	1	75001	5	FRAMINGHAM	9	WORCESTER RD	W OF PROSPECT ST	0	00/00/75	40250
58	1	100	1	75001	5	FRAMINGHAM	9	WORCESTER RD	W OF PENN CENTRAL RR	0	07/ 0/75	30028
59	1	100	1	76001	5	FRAMINGHAM	9	WORCESTER RD	AT NATICK TL	0	07/ 0/76	35050
60	1	100	1	76001	5	FRAMINGHAM	9	WORCESTER RD	W OF PENN CENTRAL RR	0	07/ 0/76	28710
61	1	100	1	77001	5	FRAMINGHAM	9	WORCESTER RD	AT NATICK TL	0	07/ 0/77	32950
62	1	100	1	77001	5	FRAMINGHAM	9	WORCESTER RD	W OF PROSPECT ST	0	07/ 0/77	44150
63	1	100	1	77001	5	FRAMINGHAM	9	WORCESTER RD	W.OF PENN CENTRAL RR	0	00/00/77	32380
64	1	100	1	78001	5	FRAMINGHAM	9	WORCESTER RD	AT NATICK TL	0	07/ 0/78	41150

Appendix A-1 Samples from Computer Printout
Mechanical Recorder Counts

TURNING MOVEMENT COUNT DATA
Metropolitan Area Planning Council

RECORD NUMBER	COUNT TYPE	TOWN NO.	ROAD NO.	ID NO.	TIME PERIOD	CITY OR TOWN	AREA OF COUNT	SEC. ROAD NO.	NO. OF COUNTS	DATE
96	2	170	137	83001	3	MARLBOROUGH	PLEASANT ST. AND FITCHBERG ST.	160	1	10/00/82
97	2	170	159	83001	3	MARLBOROUGH	WEST HILL ST.AND PLEASANT ST.	137	1	10/00/82
98	2	170	137	83001	3	MARLBOROUGH	PLEASANT ST. AND ASH ST.	108	1	10/00/82
99	2	170	111	83001	3	MARLBOROUGH	MECHANIC ST. AND ASH ST.	108	1	10/00/82
100	2	170	108	83001	3	MARLBOROUGH	ASH ST., HUDSON ST., AND HOSPITAL ENTRANCE	95	1	10/00/82
101	2	170	90	83001	3	MARLBOROUGH	RESERVOIR ST., BOLTON ST., AND RTE 85	96	1	10/00/82
142	2	170	1	85001	4	MARLBOROUGH	RTE 20, FROM LINCOLN ST. TO HAGER ST.	12	4	00/00/85
** Subtotal **									13	
** MEDFORD										
269	2	176	23	87001	4	MEDFORD	MYSTIC VALLEY PARKWAY AND LOCUST ST	22	1	00/00/84
270	2	176	22	87001	4	MEDFORD	LOCUST ST AND RIVERSIDE AVE	2	1	00/00/84
271	2	176	2	87001	4	MEDFORD	RIVERSIDE AVE	0	3	00/00/84
** Subtotal **									5	
** MIDDLETON										
121	2	184	1	84001	4	MIDDLETON	S. MAIN ST(RTE 1141. AND BOSTON ST(RTE 62)	84	1	09/15/82
122	2	184	0	84001	4	MIDDLETON	MIDDLETON SQUARE	0	2	09/15/82
119	2	184	1	84001	4	MIDDLETON	S. MAIN ST(RTE 1141. AND BOSTON ST(RTE 62)	84	1	00/00/84
120	2	184	1	84001	4	MIDDLETON	S. MAIN ST(RTE 1141. AND MAPLE ST(RTE 62)	44	1	00/00/84
** Subtotal **									5	
** MILFORD										
153	2	185	235	83001	4	MILFORD	RTE 109(MEDWAY ST.) AT KMART AND MCDONALDS	0	1	12/08/82
149	2	185	235	83001	4	MILFORD	RTE 109(MEDWAY ST.) AND BEAVER ST.	241	1	12/09/82
151	2	185	235	83001	4	MILFORD	RTE 109(MEDWAY ST.) AND MALL DRIVE-WEST	0	1	12/10/82
152	2	185	235	83001	4	MILFORD	RTE 109(MEDWAY ST.) AND MALL DRIVE-EAST	0	1	12/10/82
150	2	185	235	83001	4	MILFORD	RTE 109(MEDWAY ST.) AND BIRCH ST.	243	1	12/14/82
154	2	185	235	83001	4	MILFORD	RTE 109(MEDWAY ST.) AND RTE 495	0	1	12/17/82
80	2	185	235	85001	4	MILFORD	AREA OF RTES 109.16,I-495, AND BEAVER ST.	103	6	00/00/85
272	2	185	0	87001	4	MILFORD	WEST OF I495. INCLUDING INTERCHANGES	0	11	00/00/87
282	2	185	19	87002	5	MILFORD	SOUTH MAIN ST FROM DEPOT ST TO MILFORD SQ DVLPMNT3	35	8	00/00/87
** Subtotal **									31	
** NEEDHAM										
228	2	199	4	84001	4	NEEDHAM	HIGHLAND AVE. AT SECOND AVE.	305	1	09/18/84
229	2	199	4	84001	4	NEEDHAM	HIGHLAND AVE. AT WEXFORDST.	311	1	09/18/84
230	2	199	4	84001	4	NEEDHAM	HIGHLAND AVE. AT FIRST AVE.	301	1	09/18/84
223	2	199	2	84001	4	NEEDHAM	WEBSTER ST. AT GREENDALE AVE.	231	1	09/19/84
225	2	199	263	84001	4	NEEDHAM	HUNTING RD. AT KENDRICK ST.	231	1	09/19/84
231	2	199	4	84001	4	NEEDHAM	HIGHLAND AVE. AT GOULD ST. AND HUNTING RD.	36	1	09/19/84
232	2	199	4	84001	4	NEEDHAM	HIGHLAND AVE. AT WEBSTER ST.	2	1	09/19/84
224	2	199	231	84001	4	NEEDHAM	GREENDALE AVE AT KENDRICK ST.	231	1	09/20/84
226	2	199	231	84001	4	NEEDHAM	KENDRICK ST. AT THIRD AVE.	303	1	09/20/84

Appendix A-2
Samples from Computer Printout
Turning Movement Counts

MECHANICAL RECORDER COUNT SUMMARY

VANASSE HANGEN ASSOCIATES, INC.
TRANSPORTATION ENGINEERS & PLANNERS
60 BIRMINGHAM PARKWAY, BOSTON MA 02135
(617) 783-7000
CALCULATOR: PS JOB NO: 1229
DATE: 06/17 YEAR: 1985 (MONDAY)

LOCATION: RT. 20 E. OF HAGER POND
MARLBORO, MASS.
DIRECTION: EASTBOUND
COUNT INTERVAL: 60 minutes
START TIME: 5:00 P.M.
END TIME: 10:00 A.M.

TIME	SUN	MON	TUES	WED	THUR	FRI	SAT	TOTAL	WKDY HRLY AVG
AM									
12-01	0	0	52	62	74	76	0	264	66
01-02	0	0	32	30	37	62	0	161	40
02-03	0	0	15	26	23	51	0	115	29
03-04	0	0	11	13	13	14	0	51	13
04-05	0	0	26	31	30	33	0	120	30
05-06	0	0	155	158	158	156	0	627	157
06-07	0	0	711	769	815	749	0	3044	761
07-08	0	0	1241	1279	1205	1129	0	4854	1214
08-09	0	0	801	780	774	824	0	3179	795
09-10	0	0	460	505	486	496	0	1947	487
10-11	0	0	466	517	567	0	0	1550	517
11-12N	0	0	451	550	493	0	0	1494	498
PM									
12-01	0	0	557	647	638	0	0	1842	614
01-02	0	0	593	543	590	0	0	1726	575
02-03	0	0	586	481	578	0	0	1645	548
03-04	0	0	513	554	534	0	0	1601	534
04-05	0	0	584	631	607	0	0	1822	607
05-06	0	661	667	692	707	0	0	2727	682
06-07	0	474	513	559	589	0	0	2135	534
07-08	0	433	452	444	511	0	0	1840	460
08-09	0	371	408	409	416	0	0	1604	401
09-10	0	244	313	288	291	0	0	1136	284
10-11	0	191	222	243	258	0	0	914	229
11-12M	0	115	127	126	114	0	0	482	121
TOTAL	0	2489	9956	10337	10508	3590	0	36880	10196

AVERAGE WEEKDAY DAILY TRAFFIC: 10196 VEHICLES PER DAY (VPD)

AM PEAK HOUR (VPH)	% OF ADT (%)	PEAK HOUR FACTOR (PHF)	MIDDAY PEAK HOUR (VPH)	% OF ADT (%)	PEAK HOUR FACTOR (PHF)	PM PEAK HOUR (VPH)	% OF ADT (%)	PEAK HOUR FACTOR (PHF)
1279	13 %	0	647	6 %	0	707	7 %	0

AM PEAK HOUR: 7:00- 8:00 M'DAY PEAK HR: 12:00- 13:00PM PEAK HOUR: 17:00- 18:0

TRAFFIC COUNT FILE
FOR
BOSTON REGION

Index#: 1-170-0001-85001

Community: Marlborough

Location: Rte 20, E. of Hager Pond

Date of Count: 6/17/85

Source:
Firm: Vanasse / Hangen

Document:
Draft Environmental Impact Report
Raytheon Company Equipment
Division Laboratory
EOEA # 5676

Information Available at

Metropolitan Area Planning Council
MAPC
[illegible] Street Boston, Massachusetts 02108
(617) 451-2770

Appendix B-2
Sample from Paper File
Turning Movement Count

TRAFFIC COUNT FILE
FOR
BOSTON REGION

Index#:
2-035-0009-87001
2-035-0007-87001

Community: Boston

Location:
area bordered by Massachusetts Ave, Boylston St, Dartmouth St, + Columbus Ave (SE from Mass. Ave. + Boylston St.)

Date of Count: 1986

Source:
Firm:
Skidmore, Owings, + Merrill

Document:
Final Environmental Impact Report
116 Huntington Avenue
EOEA #5777

Information Available at

Metropolitan Area Planning Council
MAPC
110 Tremont Street Boston, Massachusetts 02108
(617)-451-2770

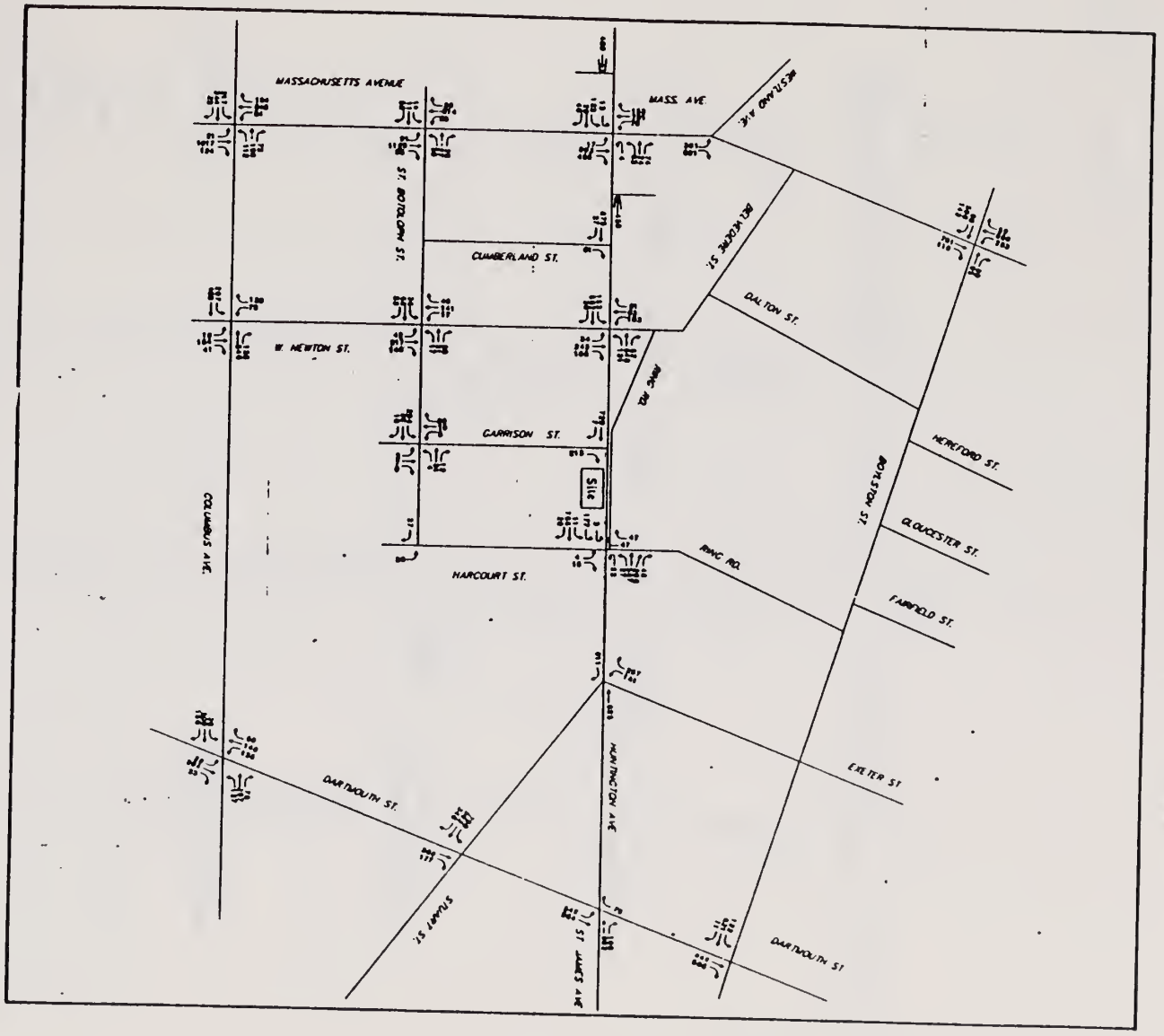
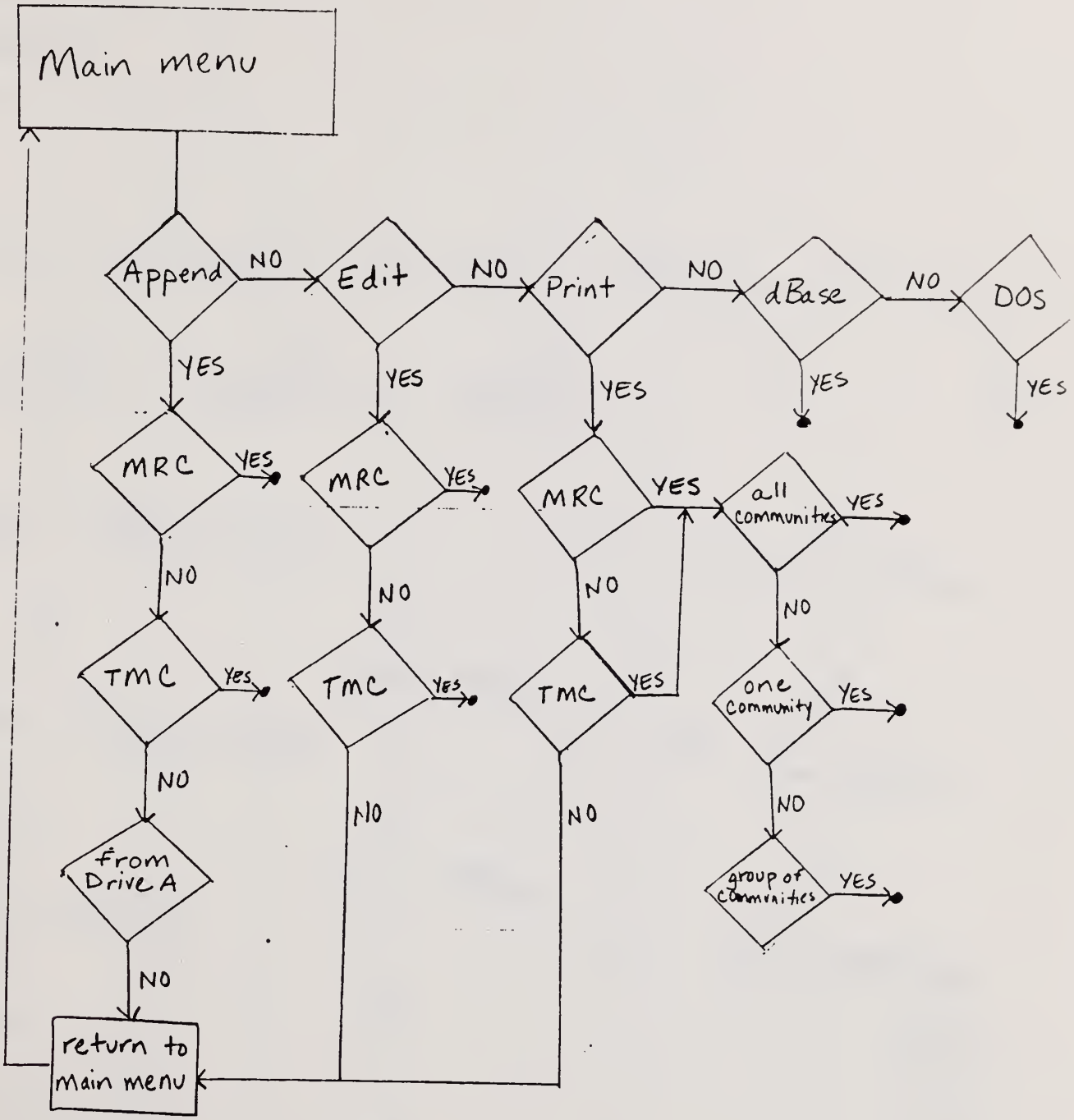


EXHIBIT IV A-3
Existing AM Peak Hour Traffic Volumes

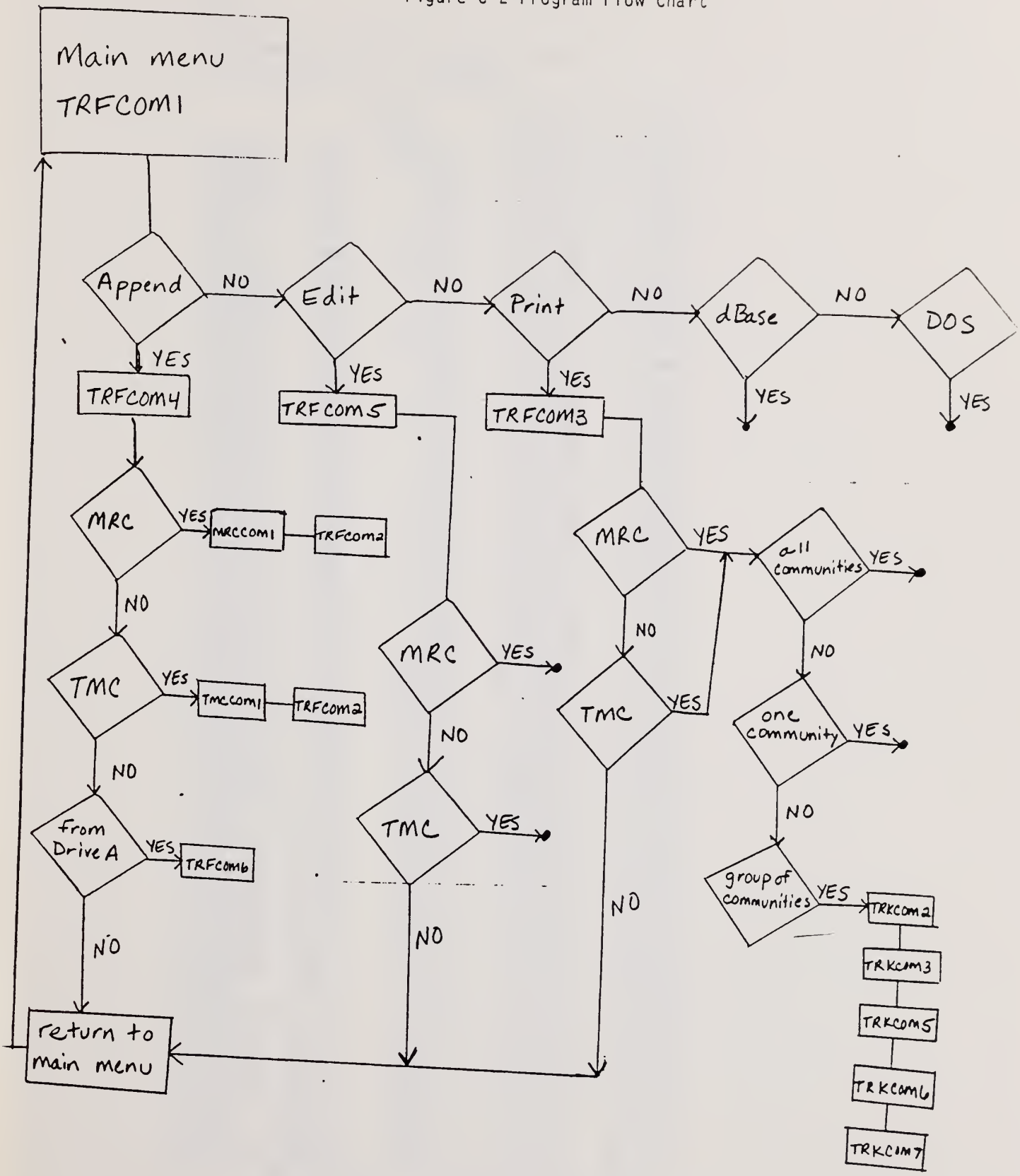
Appendix C Flow Charts

Figure C-1 Menu Flow Chart



Appendix C Flow Charts

Figure C-2 Program Flow Chart



Printout of Programs

```
DIR

 Volume in drive C has no label
 Directory of  C:\TRAFFIC

.              <DIR>       6-02-87   10:18a
..             <DIR>       6-02-87   10:18a
MRCDBF1  BAK    242601     8-12-87   10:10a
TMCDBF1  BAK     39194     8-12-87   10:01a
MRCDBF2  BAK       645     7-01-87   10:56a
TMCDBF2  DBF       512     8-13-87    2:42a
TEMP     BAK     36074     6-25-87    8:52a
VTEMP    BAK     24749     1-01-80   12:32a
MRCTEMP  DBF     13876     2-20-87   12:08a
TMCTEMP  DBF      1146     2-20-87   12:09a
TRKDBF2  DBF      3860     7-08-87    8:39a
MRCDBF1  DBF    243546     8-13-87    2:40a
MRCCOM1  BAK       404     7-28-87   11:06a
TMCCOM1  BAK       383     7-28-87   11:04a
TMCDBF1  DBF     39310     8-13-87    2:42a
TRFCOM6  PRG       815     6-23-87    1:34p
TRFCOM6  BAK       754     6-03-87   11:59a
MRCCOM1  PRG       404     7-31-87    9:42a
TRFCOM2  PRG       407     6-23-87    1:35p
TRKCOM2  PRG      4712     6-23-87    1:39p
TRFCOM4  PRG      1051     7-15-87    8:23a
TRFCOM2  BAK       326     1-01-80   12:56a
MRCDBF2  DBF      1024     8-13-87    2:40a
TRKCOM6  PRG      3989     6-23-87    1:45p
TRFCOM1  PRG       719     7-27-87    2:33p
MAKENDX  PRG       332     1-01-80    1:01a
MAKENDX  BAK       332     1-01-80    1:01a
MRCNDX1  NDX     71680     8-13-87    2:40a
TMCNDX1  NDX     14336     8-13-87    2:42a
MRCNDX2  NDX      3584     1-01-80    3:31a
MRCREP1  FRM      1990     6-02-87   11:46a
TMCREP1  FRM      1990     6-16-87   11:35a
TRKCOM2  BAK      4712     6-22-87   11:48a
TRKCOM3  PRG      4099     6-23-87    1:41p
TRKCOM5  PRG      3983     6-23-87    1:43p
VTEMP    DBF     24749     8-13-87    3:14a
TRKCOM7  BAK      1609     6-23-87    1:46p
TRFCOM3  BAK      3088     7-07-87    1:29a
TRKCOM3  BAK-     4027     6-03-87    9:49a
TRKCOM5  BAK      3922     6-03-87    9:49a
TRKCOM6  BAK      3928     6-03-87    9:50a
TRFCOM4  BAK      1051     7-15-87    8:22a
TRFCOM5  PRG      1553     7-28-87   11:36a
ROUTE    PRG       424     7-31-87    2:01p
TMCDBF2  BAK       512     6-25-87   12:53p
TMCCOM1  PRG       383     7-28-87   11:04a
TRKCOM7  PRG      1577     6-29-87   12:44a
TRFCOM5  BAK      1553     7-28-87   11:36a
TRFCOM3  PRG      3088     7-07-87    1:29a
ROUTE    BAK       342     7-31-87    1:53p
TEMP     DBF      1062     7-07-87    9:57a
TRFCOM1  BAK       720     7-27-87    2:31p
       52 File(s)  13418496 bytes free

C>
```